



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

26

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/386,646 08/31/99 FAZAN

P 660073.488D1

MM92/0119

FRANK ABRAMONTE
SEED AND BERRY LLP
6300 COLUMBIA CENTER
701 FIFTH AVENUE
SEATTLE WA 98104-7092

VU,H

2811

EXAMINER

ART UNIT

PAPER NUMBER

DATE MAILED:
01/19/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/386,646

Applicant(s)

GAZAN ET AL.

Examiner

HUNG VU

Group Art Unit

2811



☒ Responsive to communication(s) filed on Nov 6, 2000

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 22 and 24-37 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 22 and 24-37 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

☒ Other

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 2811

DETAILED ACTION

Response to Amendment

1. The Declaration filed on 11/08/00 under 37 CFR 1.131 is sufficient to overcome the Matsumoto et al. (PN 5,726,479) reference. Accordingly, the rejections of claims 22 and 24-37 over the Matsumoto et al. reference are being withdrawn. In view of a further search, however, a new rejection is set forth further below. This action is not made final.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 26-31 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Kimura et al. (PN 5,583,358).

Kimura et al. discloses a microelectronic device comprising,

a microelectronic substrate (11) having a trench formed in a surface thereof;

a field oxide (12) in the trench, the field oxide extending from the trench beyond the surface of the substrate;

Art Unit: 2811

a component formed on the field oxide, the component extending from the field oxide by a height at least equal to approximately two times a height that the field oxide extends from the trench beyond the surface of the substrate;

further comprising an oxide spacer adjacent the component. Note Figures 18a-20b of Kimura et al..

3. Claim 34 is rejected under 35 U.S.C. 102(b) as being anticipated by Shimbo (PN 4,980,306, of record).

Shimbo discloses a microelectronic device comprising,

a microelectronic substrate (1) having a trench formed therein;

a field oxide (17) within the trench and projecting therefrom by a height which is small enough to prevent the formation of spacers adjacent the field oxide;

a component (304) formed on the field oxide. Note Figures 2f and 3a of Shimbo.

4. Claims 22, 24, 25, 32, 35, and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Morita et al. (PN 5,073,813).

Morita et al. discloses a microelectronic device comprising,

a microelectronic substrate (31);

a gate structure including a gate oxide layer (34) formed on the substrate, a first gate layer (36a) formed on the gate oxide layer, and an adhesion layer (41a) composed of a material other

Art Unit: 2811

than a conductively doped polysilicon material formed on the first gate layer, the gate structure having a trench at least partially disposed therein and extending into the substrate;

a field oxide layer at least partially in the trench, the field oxide layer having a field oxide level between the level of an upper surface of the substrate and the level of an upper surface of the first gate layer;

further comprising a silicide layer formed on the adhesion layer. Note Figure 5 of Morita et al..

5. Claims 22 and 25-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Manning et al. (PN 5,411,909).

Manning et al. discloses a microelectronic device comprising,

a microelectronic substrate (102) having a trench (104) formed in a surface thereof;

a gate structure formed on the substrate, the gate structure including a gate oxide layer (107) formed on the microelectronic substrate, a first gate layer (lower portion of 122) formed on the gate oxide layer, an adhesion layer (upper portion of 122) composed of a material other than a conductively doped polysilicon material formed on the first gate layer, and a conductive layer (150) formed on the adhesion layer;

a field oxide deposited in the trench, the field oxide extending from the trench beyond the surface of the substrate by a height which is less than or equal to approximately one half of a height of the gate structure formed on the substrate;

Art Unit: 2811

an oxide spacer (136) adjacent the gate structure;

a component (124) formed on the field oxide, the component extending from the field oxide by a height at least equal to approximately two times a height that the field oxide extends from the trench beyond the surface of the substrate;

an oxide spacer (136) adjacent the component. Note Figure 11 and an attachment of Manning et al..

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morita et al. (PN 5,073,813).

Morita et al. discloses all of the claimed limitations except the an oxide spacer adjacent the gate structure. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the gate structure of Morita et al.'s having an oxide spacer because such structure is convention to form in order to protect the gate and the source/drain region from short-circuit.

Art Unit: 2811

7. Claim 24 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manning et al. (PN 5,411,909).

Manning et al. discloses all of the claimed limitations except a silicide layer formed between the adhesion layer and a thin film transistor (150). However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the device of Manning et al.'s having a silicide between the adhesion layer and a thin film transistor in order to further reduce the contact resistance thereof.

Response to Arguments

8. Applicant's arguments with respect to claim 22 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Papers related to this application may be submitted to Technology Center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the TC 2800 Fax center located in Crystal Plaza 4, room 4-C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 2811 Fax Center number is (703) 308-7722 and 308-7724. The Group 2811 Fax Center is to be used only for papers related to Group 2811 applications.

Art Unit: 2811

Any inquiry concerning this communication or any earlier communication from the Examiner should be directed to ***Hung Vu*** whose telephone number is (703) 308-4079. The Examiner is in the Office generally between the hours of 7:00 AM to 5:30 PM (Eastern Standard Time) Monday through Thursday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ***Tom Thomas***, can be reached on (703) 308-2772.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Technology Center Receptionists** whose telephone number is (703) 308-0956.

Vu

January 13, 2001

Steven Loke
Primary Examiner

A handwritten signature in cursive script that reads "Steven Loke".